

SESSION 2:

DEVELOPING AN ANSWERABLE PICO QUESTION
CONDUCTING A SYSTEMATIC LITERATURE REVIEW

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Developing an Answerable PICO Question

The Practice Question: PICO

- You want to unlock the answer to the right question
 - ▣ The question drives the search strategy

- Asking the right question takes thoughtfulness, it may take time, and can be challenging

- Some things to consider:
 - ▣ *Background questions*
 - General, state of the science
 - Evidence review can be complex
 - Example: “What are the best nursing interventions to prevent falls for older adults?”

 - ▣ *Foreground questions*
 - Focused
 - Has specific comparison
 - Example: “Are bed alarms or hourly rounding more effective for preventing falls among older adults?”

Format of PICO questions

- **P**opulation
 - Includes attributes such as age, gender, or healthcare problem/setting

- **I**ntervention
 - Can be a treatment, intervention (i.e. educational), process of care, or assessment approach

- **C**omparison
 - Determine if a meaningful comparison exists. Not all questions have comparison, it might be usual care

- **O**utcome
 - Clinically meaningful endpoint. It could be QOF, cost, pt satisfaction, pain, length of stay, etc. All outcomes have a metric

- **Time**
 - Time it takes to demonstrate outcome

How PICO questions are formed

(Dearholt & Dang, 2012)

- Problem Focused
 - ▣ Financial concerns
 - ▣ Clinicians questioning current practice
 - ▣ Quality concern
 - ▣ Safety concern
 - ▣ Variation in practice identified
- Knowledge Focused
 - New evidence
- Clinicians at the bedside are in key positions to form PICO questions
- Often these PICO questions are refined in inter-professional teams
- Priority is then assigned to certain questions

How Research & PICO questions are formed

- Key idea is that the question NEEDs to be answerable
- Importance of asking the right question, and the consequence of not asking the right question (i.e. VIOXX example)

Templates for PICO questions (Melnyk & Fineout-

Overholt, 2010)

□ For an intervention/therapy:

In _____(P), what is the effect of _____(I) on _____(O) compared with _____(C) within _____(T)?

- **Example:** In adult patients with total hip replacements (P) how effective is PCA pain medication (I) compared to prn IM pain medication (C) in controlling post operative pain (O) during the perioperative and recovery time (T)?
- **Example:** In urban African Americans with hypertension (P), does telmonitoring blood pressure (I) compared to usual care (C) improve blood pressure control (O) within the six months of initiation of the medication (T)

Templates for PICO questions (Melnyk & Fineout-

Overholt, 2010)

□ **Diagnosis or diagnostic test:**

Are (is) _____ (I) more accurate in diagnosing
_____ (P) compared with _____ (C) for _____
(O)?

- **Example:** Is a PKU test (I) done on two week old infants (P) more accurate in diagnosis inborn errors in metabolism (O) compared with PKU tests done at 24 hours of age (C)?

Templates for PICO questions (Melnyk & Fineout-

Overholt, 2010)

□ **Prevention:**

For _____ (P) does the use of _____ (I) reduce the future risk of _____ (O) compared with _____ (C)?

- **Example:** In OR nurses doing a five minute scrub (P) what are the differences in the presence and types of microbes (O) found on natural polished nails and nail beds (I) and artificial nails (C) at the time of surgery (T)?

Common mistakes I see

- Too much variation in what the “intervention” looks like
- Not focusing on key outcomes

Share some of your burning PICO questions

- Practice: At the end of this session we will have 20 minutes to come up with a burning question in the PICO format



Systematic Literature Review

Why do a Systematic Literature Review

- It is one of the most important steps in an EBP project (& in research); it helps us know what is known/unknown
- Explosion of information makes it difficult for us to process all relevant literature
- If nurses only search a single resource, journal, or database, they will likely miss important evidence
- Important to work with librarians and learn how to search proprietary data-bases

Systematic Literature Review

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Knowledge Specialist for Research & Instruction

Treadwell Virtual Library | Massachusetts General Hospital

<http://massgeneral.org/library> | [617-724-2779](tel:617-724-2779) |

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Ok, I did a systematic review... now what?

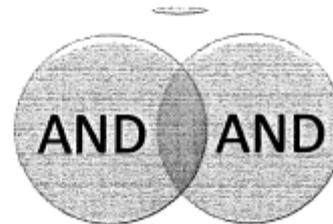
- Screen the references for relevance
 - ▣ By reading the title & abstract
- Access relevant full articles
- Read the articles to make sure it is indeed relevant to PICO question
- Review the article and make judgments about the worth of the study's evidence
- Summarize the “body” of evidence you find (i.e. the articles you select to include in your EBP)

Mistakes I see...

- Not capturing all relevant studies (i.e., cherry picking)
- Double dipping (i.e., including primary studies that were included in systematic reviews)
- Not adequately documenting search strategy

PICO search worksheet: Practice!

POPULATION/PROBLEM		INTERVENTION		COMPARISON		OUTCOME
_____	AND	_____	AND	_____	AND	_____
(or)		(or)		(or)		(or)
_____		_____		_____		_____
_____		_____		_____		_____
_____		_____		_____		_____
_____		_____		_____		_____
_____		_____		_____		_____



Appendix B: Question Development Tool

1. What is the problem and why is it important?
2. What is the current practice?
3. What is the focus of the problem?
<input type="checkbox"/> Clinical <input type="checkbox"/> Educational <input type="checkbox"/> Administrative
4. How was the problem identified? (Check all that apply)
<input type="checkbox"/> Safety/risk management concerns <input type="checkbox"/> Quality concerns (efficiency, effectiveness, timeliness, equity, patient-centeredness) <input type="checkbox"/> Unsatisfactory patient, staff, or organizational outcomes <input type="checkbox"/> Variations in practice within the setting <input type="checkbox"/> Variations in practice compared with external organizations <input type="checkbox"/> Evidence validation for current practice <input type="checkbox"/> Financial concerns
5. What is the scope of the problem?
<input type="checkbox"/> Individual <input type="checkbox"/> Population <input type="checkbox"/> Institution/system
6. What are the PICO components?
P – (Patient, population, problem): I – (Intervention): C – (Comparison with other interventions, if applicable): O – (Outcomes that include metrics for evaluating results):
7. Initial EBP question:
8. List possible search terms, databases to search, and search strategies:
9. What evidence must be gathered? (Check all that apply)
<input type="checkbox"/> Literature search <input type="checkbox"/> Patient/family preferences <input type="checkbox"/> Standards (regulatory, professional, community) <input type="checkbox"/> Clinical expertise <input type="checkbox"/> Guidelines <input type="checkbox"/> Organizational data <input type="checkbox"/> Expert opinion